

### REMARKS

This is a full and complete response to the Office action dated January 17, 2006.

All comments and remarks of record are herein incorporated by reference. Applicants respectfully traverse these rejections and all comments made in the Office action. Nevertheless, in an effort to expedite prosecution, Applicants provide the following remarks regarding the cited references.

### DISPOSITION OF CLAIMS

Claims 1-7, 9-30 are pending in the application. New Claim 31 has been added. Support for this claim may be found on page 4, lines 12-14 of the application and claims 1 and 5. Applicants maintain that the addition of this claim does not constitute new matter which would require an additional search.

### REJECTION UNDER 35 USC §103(a)

Claims 1-7 and 9-30 stand rejected under 25 USC §103(a) as being unpatentable over **De Keyser et al.**, US 6,455,627, ("**De Keyser I**"), taken alone or in view of **De Keyser et al.**, US 6,465,557, ("**De Keyser II**"). Applicants respectfully traverse this rejection.

#### (a) Remarks Regarding De Keyser I

In the Office action of January 17, 2007, the Examiner states that **De Keyser I** teaches: 1) the use of butadiene copolymers at col. 3, lines 60+, 2) that SEBS block copolymer G-1650 reads on the instant claimed polymer, and 3) that the mentioned disadvantages of compatibility do not supercede the obviousness therein. Applicants respectfully disagree.

Applicants respectfully note that the present claims recite, inter alia, an adhesive comprising an amorphous polyolefin and a selectively hydrogenated block copolymer having a polystyrenic block as well as a polydiene block. Claim 1 also recites that the

polydiene block can be polybutadiene or a mixture of polybutadiene and isoprene. (See specifically, subsections (b) and (c)). Therefore, Applicants respectfully assert that claim 1 recites the incorporation of butadiene in the polydiene block.

Furthermore, claims 5 and 31 recite that the “E block is polybutadiene” and the “E<sub>1</sub> block is two or more coupled polybutadiene blocks.” Therefore, the block copolymers according to claims 5 and 31 incorporate a butadiene block.

**De Keyser I** discloses an adhesive comprising :

- (a) a hydrogenated styrene-butadiene-styrene (“SBS”) or styrene-isoprene-styrene (“SIS”) block;
- (b) a hydrogenated SISI block;
- (c) and an amorphous ethylene/propylene copolymer,

as well as a tackifying resin and plasticizer.

Applicants respectfully note to the Examiner that although **De Keyser I** mentions butadiene containing polymers in Col. 3, none of the block copolymers discussed in **De Keyser I** disclose or suggest the polymers recited in the instant claims.

As indicated above, the instant claims recite a vinyl content of 72 to 90 mole percent of the polydiene block. None of the block copolymers mentioned in **De Keyser I** disclose or suggest a vinyl content within this range. Contrary to Examiner’s assertion that “G-1650 reads on the claimed polymer”, Applicants respectfully submit that G-1650 has a vinyl content of 35 wt% as indicated in **De Keyser II**, col. 1, lines 57-58. Thus, Applicants respectfully assert that G-1650 does not read on the block copolymer of the present invention.

Furthermore, when butadiene containing block copolymers are mentioned in Col. 4 of **De Keyser I**, it is in the context of how such block copolymers are not compatible with amorphous polyalpha-olefins. Due to this, Applicants respectfully assert that **De Keyser I** teaches away from the claimed invention.

As indicated in **De Keyser I**, “[a]morphous polyalpha-olefins are well known to be incompatible with styrene-ethylene/butylene-styrene [SEBS] block copolymers.” *See De Keyser I*, col. 4, lines 35-37. **De Keyser I** discloses that amorphous ethylene/propylene copolymers (APE) have acceptable compatibility with hydrogenated

styrene-isoprene block copolymers. *See De Keyser I*, col. 4, lines 37-43. In order to improve properties, **De Keyser I** discloses adding styrene-isoprene block copolymers to adhesive compositions. As shown in the Examples of **De Keyser I**, an SISI block copolymer, G-1730, is added to an adhesive to improve properties as shown in formulations 4 and 5 in Table 1. *See De Keyser I*, Col. 7, lines 58 to Col. 8, line 5. Therefore, since **De Keyser I** discloses that SEBS block copolymers are not compatible with amorphous polyalpha olefins, **De Keyser I** teaches away from the instant claims.

*(b) Remarks Regarding De Keyser II*

The Examiner further states that **De Keyser II** shows polymers within the scope of the instant claims.

According to §103, in order to establish a prima facie case of obviousness, there must be (1) some suggestion or motivation to modify the references, (2) reasonable expectation of success and (3) the prior art reference must teach or suggest all of the claim limitations. *See* MPEP §2143.

In the case at hand, Applicants respectfully assert that there is no suggestion or motivation for modifying **De Keyser I** in view of **De Keyser II**.

**De Keyser II** is directed to a pressure sensitive positioning adhesive comprising

- (a) an SBS or SIS block copolymer having a vinyl content of greater than 50%;
- (b) a tackifying resin;
- (c) a plasticizer.

While **De Keyser II** discloses a positioning adhesive containing an SEBS block copolymer, the use of poly alpha-olefins as a major component of said adhesive is not disclosed or suggested. The only polyolefin disclosed in **De Keyser II** is the use of **liquid** alpha-olefin polymers, however, the amorphous polyolefins of the claimed invention are solid at room temperature. Furthermore, in **De Keyser II**, polymer B is disclosed as having 75% vinyl, and polymer C is disclosed as having 78% vinyl, however, although having high vinyl content, neither are contained in a composition with a solid amorphous polyolefin. Therefore, **De Keyser II** does not disclose or suggest

combining the polymers disclosed therein with the poly alpha-olefins of the presently claimed invention.

*(c) Unexpected results*

Furthermore, the examples of the present invention do show unexpected results which overcome any issues of obviousness. One of ordinary skill in the art would not expect that high vinyl SEBS copolymers according to the claimed invention would have superior properties when combined with the amorphous polyolefins.

As illustrated in example 1, an SEBS block copolymer with a vinyl content of 76% was mixed with a polyolefin, resulting in an admixture having a smooth appearance. However, as shown in comparative example A, a similar adhesive as component A was tested, except the block copolymer therein had a vinyl content of 40%, which resulted an admixture having a grainy appearance. This demonstrates, surprisingly, that block copolymers having a high vinyl content such as those of the present invention are more compatible with polyolefins than those having a lower vinyl content.

Furthermore, in example 2 in the present application, an SEBS block copolymer having a vinyl content of 76% was used as a component in an adhesive composition which was then formed into a tensile specimen for testing. However, as shown in comparative example B, an adhesive containing an SEBS block copolymer having a vinyl content of 40% was not able to be formed into a tensile specimen because the adhesive admixture phase separates.

Therefore, unexpectedly, as shown by the examples of the present application, SEBS copolymers having a high vinyl content according to the claimed invention are compatible with polyolefins. None of the cited references teach or suggest that high vinyl SEBS block copolymers such as those claimed would have superior properties in adhesives such as those claimed. Furthermore, as indicated above, the art cited provides that SEBS block copolymers are incompatible with amorphous polyolefins.

In view of the foregoing, Applicants respectfully assert that there is no motivation for modifying the references, and furthermore, unexpected results are shown. Therefore

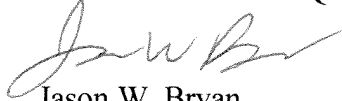
applicants respectfully assert that no prima facie case of obviousness has been established, and respectfully request that the 35 USC §103 rejection be withdrawn.

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**Conclusion**

Having addressed all issues set out in the Office action, Applicants respectfully submit that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,  
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